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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,098	01/22/2002	Jack C. H. Chung	075635.0124	8102

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EXAMINER

BOYCE, ANDRE D

ART UNIT	PAPER NUMBER
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3623

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/18/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/055,098

Applicant(s)

CHUNG ET AL.

Examiner

Andre Boyce

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Final office action is in response to Applicant's amendment filed September 14, 2006. Claims 1, 5, 6, 11, 12, 16, 17, and 22 have been amended. Claims 1-22 are pending.
2. The previously pending objection to the abstract has been withdrawn.
The previously pending objections to the drawings have been withdrawn.
The previously pending rejections to claims 1-22 under 35 U.S.C. 112, second paragraph, have been withdrawn.
3. Applicant's arguments filed September 14, 2006 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
5. Claims 1-3, 5, 9, 11-14, 16, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Meystel et al (USPN 6,102,958).

As per claim 1, Meystel et al disclose a method for integrated decision support (i.e., multiresolutional decision support system 10, column 9, lines 17-21), comprising the steps of: receiving a plurality of decision inputs (i.e., data 16 is input into the system 10, column 9, lines 21-25); converting a first plurality of said received decision inputs to a plurality of graph representations (i.e., multi-valued graph representation, column 16, lines 25-27); converting a second plurality of said received decision inputs to a plurality of mathematical representations (i.e., a statement of rules formed and organized by the module 32, wherein the module comprises means for extraction of data, the extraction comprising a standard algorithm, column 10, lines 9-21); decomposing said converted first plurality of said received decision inputs and said converted second plurality of said received decision inputs to a plurality of sub-problems (i.e., the organizational subsystem 20 organizes information for use by modeling system 22, column 9, lines 37-40); detecting a plurality of strongly-connected components associated with said plurality of subproblems (i.e., modeling subsystem 22 determines functional relationships of the organized data, column 9, lines 40-42), each of said plurality of strongly-connected components representing a connection between at least two of said plurality of sub-problems (i.e., system 10 broken down into a plurality of subsystems, each subsystem including one or more operational modules, column 9, lines 35-37); and solving said plurality of sub-problems (i.e., behavior generation subsystem 24 generates control commands, column 9, lines 42-44).

As per claim 2, Meystel et al disclose performing dependency propagation for said plurality of sub-problems; and placing said plurality of sub-problems in at least one predefined order for solution (i.e., developing of a multiresolutional data structure based on associative clusters, which transforms a provisional relational model into a multilevel hierarchical structure, column 10, lines 40-46).

As per claim 3, Meystel et al disclose executing a graph-theoretic algorithm for a plurality of mathematical equations associated with said plurality of strongly-connected components to prevent over-constraining (i.e., hierarchical clustering algorithms, column 16, lines 42-45).

As per claim 5, Meystel et al disclose detecting a plurality of dependency relations within said plurality of sub-problems (i.e., determination of functional relationships, column 9, lines 40-42).

As per claim 9, Meystel et al disclose said plurality of decision inputs comprises at least one of a plurality of option selection parameters (i.e., monitoring of a plurality of variables of functioning constraints, column 9, lines 26-28); a plurality of equality relation parameters; a plurality of dependency parameters; a plurality of production rule parameters; a plurality of logical relation parameters; a plurality of inequality expression parameters; and a plurality of geometric constraint parameters.

Claim 11 is rejected based upon the same rationale as the rejection of claim 1, since it is the computer-readable medium claim corresponding to the method claim.

Claims 12-14, 16 and 20 are rejected based upon the same rationale as the rejections of claims 1-3, 5 and 9, respectively, since they are the system claims corresponding to the method claims.

Claim 22 is rejected based upon the same rationale as the rejection of claim 1, since it is the system claim corresponding to the method claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 6-8, 10, 15, 17-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meystel et al (USPN 6,102,958), in view of Johnston et al (USPN 6,826,541).

As per claim 4, Meystel et al does not disclose decomposing said converted first plurality of said received decision inputs and said converted second plurality of said received decision inputs to a plurality of mathematical equations and algebraically solvable graph components. Johnston et al discloses a method for facilitating choices among complex alternatives, wherein a statistical algorithm implemented involves calculation of regression coefficients (column 12, lines 38-42), including matrix analysis (column 14). Both Meystel and Johnston are concerned with improving decision making, therefore it would have been obvious to one having

ordinary skill in the art at the time the invention was made to include decomposing received decision inputs to a plurality of mathematical equations and algebraically solvable graph components in Meystel, as seen in Johnston, as tool for making difficult decisions less complex (see Johnston, column 2, lines 21-26), thus making Meystel more effective and robust.

As per claims 6 and 7, Meystel et al does not disclose identifying a plurality of simultaneous equations within said plurality of sub-problems and solving a plurality of numerical sub-problems and a plurality of algebraic sub-problems. Johnston et al discloses a method for facilitating choices among complex alternatives, wherein a statistical algorithm implemented involves calculation of regression coefficients (column 12, lines 38-42), including matrix analysis (column 14). Both Meystel and Johnston are concerned with improving decision making, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include identifying a plurality of simultaneous equations and solving a plurality of numerical sub-problems and a plurality of algebraic sub-problems in Meystel, as seen in Johnston, as tool for making difficult decisions less complex (see Johnston, column 2, lines 21-26), thus making Meystel more effective and robust.

As per claim 8, Meystel et al disclose solving a plurality of numerical relations subproblems with a numerical solution algorithm (i.e., process of local interpolation, column 18, lines 21-24); and solving a plurality of logical relations subproblems with a logical inference solution algorithm (i.e., learning algorithms implemented by collection and integration of experiences, column 15, lines 62-65). Meystel et al

does not disclose solving a plurality of geometric relations subproblems with an algebraic solution algorithm. Johnston et al discloses a method for facilitating choices among complex alternatives, wherein a statistical algorithm implemented involves calculation of regression coefficients (column 12, lines 38-42), including matrix analysis (column 14). Both Meystel and Johnston are concerned with improving decision making, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include solving a plurality of geometric relations subproblems with an algebraic solution algorithm in Meystel, as seen in Johnston, as tool for making difficult decisions less complex (see Johnston, column 2, lines 21-26), thus making Meystel more effective and robust.

As per claim 10, Meystel et al does not disclose solving a plurality of simultaneous equations with a Newton-Raphson algorithm or Modified Gram-Schmidt algorithm. However, the Newton-Raphson algorithm and Modified Gram-Schmidt algorithms are old and well known in the art, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include Newton-Raphson algorithm or Modified Gram-Schmidt algorithm in Meystel, as an efficient means of solving simultaneous equations, thus making Meystel more efficient and robust.

Claims 15, 17-19 and 21 are rejected based upon the same rationale as the rejections of claims 4, 6-8 and 10, respectively, since they are the system claims corresponding to the method claims.

Response to Arguments

8. In the Remarks, Applicant argues that the cited references do not teach or suggest converting a second plurality of said received decision inputs to a plurality of mathematical representations. The Examiner respectfully disagrees. Meystel et al disclose a finite set of information assembled in association with search and retrieval algorithms (column 15, lines 57-62). In addition, Meystel et al disclose a statement of rules formed and organized by the module 32, wherein the module comprises means for extraction of data, the extraction comprising standard algorithm (column 10, lines 9-21). As such, the statement of rules and algorithm are both mathematical representations. Moreover, contrary to Applicant's assertion, Meystel et al does not state that mathematical representations are not used. Rather, Meystel et al simply states that it does not use a *predetermined* mathematical model or algorithm, but instead a fluid provisional data structure (column 3, lines 3-12) and that it *eliminates the stage* of mathematical abstraction and parameter identification (column 21, lines 59-63). As such, neither cited portion precludes Meystel et al from teaching Applicant's invention.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

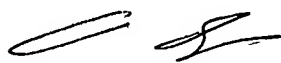
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571) 272-6726. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

adb
December 9, 2006


ANDRE BOYCE
PATENT EXAMINER
A.U. 3623